

USSR

UDC 621.3.049.774.002.5

DADAMYAN, Z. M., ~~DEGTYAREV, A. P.~~, KOKHANOV, B. T., MAKAROV, Yu. Ye.

"A Method of Making Printed Circuits"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 2, Jan 71, Author's Certificate No 290494, division H, filed 13 Sep 68, published 22 Dec 70, p 170

Translation: This Author's Certificate introduces a method of making printed circuits based on making an electrostatic image of the printed circuit on a foil-coated dielectric board, and etching the blank sections. As a distinguishing feature of the patent, the method is simplified by covering the foil-coated board with a dielectric layer such as lacquer with a polyvinyl alcohol base before applying the electrostatic image of the circuit.

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UDC 669.295.046.78

DENISOV, S. I., RASPOPIN, V. G., and DEGYAREV, B. S.

"Significance of the Limit of Charge Briquetting in the Melting of Titanium Concentrates"

Sb. tr. Vses. n.-i. i proyekt. in-t titana, [Collected works of All-Union Scientific-Research and Planning Institute for Titanium] 6, 1970, 12-15, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No. 176 by the authors).

Translation: It is established on the basis of results of studies of the melting of powdered and briquetted charges of Fe-Ti concentrate from the Samotkanskiy deposit (64% TiO_2 , 24% FeO), performed in an open type

commercial furnace with a power of 10,500 kva, that the time during which current is applied to the furnace is significantly higher when powdered titanium is used (95.5%) than when briquettes are melted (90.5%) due to the reduction in standing time between melting cycles. The productivity of the furnace as to slag is higher when the powdered charge is melted than when briquettes are melted (3.40 rather than 3.27 t/hr). However,

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UDC 669.295.046.78

DENISOV, S. I., RASPOPIN, V. G., and DEGYAREV, B. S. Sb. tr. Vses n.i. i proyekt. in-t titana, [Collected works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, 12-15, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1970, Abstract No. 1G176 by the authors).

when this charge is melted, increased losses in concentrate occur as dust carried away with the exhaust gases (3.6% more), which can be reduced by covering the furnace with an arch and organizing a system of dust traps. Technical-economic calculations have shown that the advantages produced in melting of a briquetted charge do not justify the high expenses involved in producing the briquettes, so that melting of a powdered charge is more profitable. 2 tables.

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Acc. Nr: **AF0040872**

Ref. Code:

UR 0103

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr 1, pp 36-44

**OPTIMAL CONTROL OF MONODIMENSIONAL PROCESSES
WITH TIME-DELAY ARGUMENT**

G. L. DEGTYAREV, T. K. SIRAZETDINOV

There is determined the principle of maximum as the necessary condition of the optimality of control in the systems described by nonlinear hyperbolic equations with a time-delay argument. Time-delay occurs both in the equations of movement and in the boundary conditions. A case of time-delay in control is considered.

REEL/FRAME
19750611

In the article consideration is being given to the developing over the North Atlantic on the formation of large-scale fields of the reduced index of atmospheric refraction. The author points out the possibility to take into account this effect while forecasting the conditions of propagation of radio waves over the ultra-short wave range.

AP9.038940

UR 0050

Meteorologiya i Gidrologiya, 1969, Nr 7, pp 64-70

REDUCED INDEX OF ATMOSPHERIC REFRACTION OVER THE NORTH ATLANTIC
AND ITS CHANGES DEPENDING ON SYNOPTIC PROCESSES

G. M. Degtyarev

In the article consideration is being given to the effect of synoptic processes
on the formation of large-scale fields of the reduced

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Miscellaneous

USSR

UDC: 518:517.9:538.3

DEGTYAREV, L. M., SAMARSKIY, A. A., and FAVORSKIY, A. P.

"Numerical Solution of Interior Steady-State Problems in Electrodynamics"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol. 10, No. 6, November-December 1970, pp 1409-1417

Abstract: This paper considers problems connected with the numerical solution of nonselfconjugate boundary problems which arise in the investigation of electric current fields or temperature fields in a medium with anisotropic electroconductivity and thermoconductivity. By changing the approach, the authors transfer the most important characteristics of the operator in the original problem to the difference operator approximating it. A divergent difference system of second-order accuracy is set up for the divergent, positively defined operator of the original boundary problem and is applied to three different problems. These problems

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DEGTYAREV, L.M., SAMARSKIY, A.A., and FAVORSKIY, A.P., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 10, No 6, November-December 1970, pp 1409-1417

are: two-dimensional effects in boundary zones of a magnetic field or electrodes; ionization instability in a low-temperature magnetized plasma; and the two-dimensional problem of the introduction of an ultrasonic flow of conducting gas into a magnetic field. The authors express gratitude to I. V. Fryazinov.

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USSR

UDC 533.951.8

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BUGAREV, A. V., DEGTYAREV, L. M., SAMARSKIY, A. A., Corresponding
Member of the Academy of Sciences USSR, FAVORSKIY, A. P.

"Flow of a Supersonic Conducting Gas in an Inhomogeneous Magnetic
Field"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 3, 1970, pp 520-
523

Abstract: A supersonic homogeneous gas flow with finite electrical conductivity in a plane channel of constant width is studied. An external magnetic field is applied at time $t = 0$. It is assumed that the magnetic Reynolds number is small and that the magnetic field H_z is a given function of the x -coordinate. The nonstationary magnetohydrodynamic equations for the system are given. It is assumed that the flow at entry is supersonic ($M_1 = 2.92$). Previous analytical solutions of this problem have assumed that R_m is much less than 1, but since this is not always valid, it is not assumed here and numerical methods are applied. Changes in the flow parameters at entry into and exit from the magnetic field are graphed and analyzed. The following conclusions are drawn: 1. A considerable rearrangement of the
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BUGAREV, A. V., et al, Doklady Akademii Nauk SSSR, Vol 192, No 3, 1970, pp 520-523

supersonic flow and the electric current field can occur under finite values of R_m . 2. The degree of retardation of the flow and its inhomogeneity in the transverse cross section are intensified with an increase in R_m . There is a critical value of R_m which, if exceeded, leads to considerable restructuring of the flow to supersonic. The value of the integral joule heating is established asymptotically with respect to R_m . 3. A smooth change in the magnetic field reduces the degree of retardation of the flow but worsens its homogeneity over the cross section. 4. A considerable pressure and velocity gradient occurs along the wall which can effect flow in the boundary layer.

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USSR

UDC 667.61:577.472

DOLGOPOL'SKAYA, M. A., GUREVICH, Ye. S., DEGTYAREV, P. F.

"Testing Antifouling Paints under Tropical Conditions"

Kiev, Biologiya Morya -- Sbornik (Biology of the Sea -- Collection of Works), Vol 18, The Biology of Fouling, 1970, pp 40-52

Abstract: In the article are presented the results of tests on new antifouling paints under stationary conditions in the Gulf of Mexico in the Havana region as well as on two ocean-fishing ships, the "G. Uspenskiy" and the N. Ostrovskiy," traveling in the waters of the Atlantic Ocean (17 - 23°S and 5° W). Out of a large assortment of antifouling paints, the best results under tropical conditions were obtained in the testing of thermoplastic paint TPK-86, KR-24, KhV-53, KF-751, KhV-71, and KhS-79. These paints afford reliable protection against fouling not only in the Black Sea, but also under tropical conditions. The best results, both with respect to protection against fouling and with respect to film stability, were obtained as a result of the use of new synthetic-base antifouling paints. It was established that the effectiveness of antifouling paint is determined not only by

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DOLGOPOL'SKAYA, M. A., et al., Biologiya Morya -- Sbornik, Vol 18, 1970,
pp 40-52

a sufficient leaching-out rate of the poisons, but also by the reserve of the poisons in the coating. With a high leaching-out rate of the poison and a small reserve of it in the paint, it is rapidly expended and the paint becomes fouled. Under tropical conditions there is observed a higher leaching-out rate of the poison and a lower resistance of the fouling-organism larvae to the poisons. 2 tables. 20 figures. 5 bibliographic entries.

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USSR

UDC 947.943

POROSHIN, K. T. (DECEASED), SADYKOV, YU. D., KHAYDAROV, K. KH., VOYSI-KOL',
SHEYN, A. L., DEGTAREV, V. A., and BURICHENKO, V. K., Institute of Chemistry
Academy of Sciences Tadzhik SSR

"Physiologically Active Papaverine Derivatives"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 1, 1972, pp 83-84

Abstract: Papaverine reacted with acyl chlorides of sulfonic acids, carboxylic acids and chloroacetic acid, yielding N-benzenesulfonylpapaverinium chloride, m.p. 209° (dec.); N-benzoylpapaverinium chloride, m.p. 193°; N-acetylpapaverinium chloride, m.p. 217° (dec.); and the chloride of N-papaverineacetic acid, m.p. 210° (dec). The products exhibited hypotensive and spasmolytic properties.

USSR

UDC 533.933

BYKOVSKIY, YU. A., DEGTYAREV, V. G., DEGTYARENKO, N. N., YELESIN, V. F., LAPTEV, I. D., NEVOLIN, V. N., Moscow Engineering-Physics Institute

"Kinetic Energies of Laser Plasma Ions"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 658-661

Abstract: The mass-spectrometric method was used to study the ion composition and distribution of ions with different z with respect to energy in the last stage of dispersion of a substance. A transit time mass-spectrometer with an electrostatic analyzer was used in the experiments. A study was made of the maximum energy of the ions E_{\max} of a laser plasma as a function of the radiation flux density in the range of $q \sim 10^8 - 10^{11}$ watts/cm². The value of E_{\max} was obtained as a function of the ion mass. The domain of weak dependence of $E_{\max} = f(q)$ was detected in the $10^8 - 10^9$ watts/cm² range. The integral spectrum was determined by the energy distributions of the ions with different charge. Values obtained for q_1, q_2 (the flux densities) and $\gamma_i \alpha, \alpha_1$ ($N \sim q^\alpha$ where n is the total number of charged particles and $E_{\max} \sim q^{\gamma_i}$) are tabulated for Be, Al, Ti, Cu, Nb and W. For bismuth with a flux density of $10^8 \leq q \leq 10^{11}$ watts/cm², no region of weak dependence of $E_{\max} = f(q)$ was detected. This

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BYKOVSKIY, YU. A., et al., Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 658-661

agees with the calculated values of q_1' and q_2' (the boundary values of the radiation flux density range of the gigantic laser pulse in which phase transition conditions exist).

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USSR

UDC 669.295.053.24

DEGTYAREV, V. S., DENISOV, S. I., DENISOVA, N. V., KIPRICH, N. A., AND
GOBOV, A. P.

"Testing the Process of Melting of Titanium Slags on the Basis of Changing
Electrical Resistance"

Sb. tr. Vses. n.-i. i proyekt. in-t titana [Collected works of All-Union
Scientific-Research and Planning Institute for Titanium], 6, 1970, 27-29,
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract
No. 16188 by the authors).

Translation: Results are presented from a study of the electrical resistance
of granulated Ti slags as a function of various factors at 25°. As the
content of FeO changes from 15.49 to 2.5%, the resistivity of Ti slag with
a grain size of less than 0.1 mm decreases from $3.08 \cdot 10^{-5}$ to $1.41 \cdot 10^{-5}$
ohm-cm, i.e., by 218 times. Testing of the reduction electric melting of
Ti concentrates, consisting of determination of FeO during the course of
the process, can be performed by determining the electrical resistance of
the slags. 2 figures; 1 table.

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USSR

UDC 669.295

DENISOV, S. I., RASPOPIN, V. G., and DEGTYAREV, V. S.

"The Role of the Briquetting Stage in Processing Charge During the Smelting of Titanium Concentrates"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 12-15

Translation: On the basis of results from research on smelting powder and briquetted charges from iron-titanium concentrate from the Samotkanskoye deposit (64% TiO_2 , 24% FeO), conducted on an open-type industrial furnace with a capacity of 10,500 kilovolt-amperes, it was established that as a result of decreasing periods of idle time between smeltings, the time that the furnace is live in processing powder charge is considerably greater (95.5%) than in smelting briquets (90.5%). It was also shown that furnace productivity for slag in smelting powder charge is higher than in smelting briquets (3.40 as against 3.27 tons per hour). However, in smelting this charge, increased losses of concentrate with the dust of escaping gasses (more than 3.6%) takes place. This can be reduced by covering the furnace with a crown and setting up a system of capturing the dust. Technical-
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USSR

DENISOV, S. I., et al., Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 12-15

economic calculations show that the several advantages gained in smelting briquetted charge do not justify the high costs of the briquetting stage, as a result of which smelting powder charge is more profitable. Two tables and two bibliographic entries.

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USSR

UDC 669.259-04

DEGTYAREV, V. S., DENISOV, S. I., DENISOVA, N. V., KIPRICH, N. A., and
~~GOROV~~, A. P.

"On Controlling the Process of Smelting Titanium Slags by Change in
Electric Conductivity"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya
Publishing House, Vol 6, 1970, pp 27-29

Translation: Results are given of an investigation of the electrical resistance of pulverized titanium slags at a temperature of 25°C. It is established that, with a change in the ferrous oxide content from 15.49 to 2.5%, the specific resistance of the titanium slag with a coarseness of -0.1 millimeters decreased from $3.08 \cdot 10^{-5}$ to $1.41 \cdot 10^{-3}$ ohms/cm, i.e., by a factor of 218. In the authors' opinion, control over reduction electro-smelting of titanium concentrates, which consists of determining ferrous oxide during the course of the process, can be exerted by establishing the electrical resistance of the slags. Two illustrations, one table, and three bibliographic entries.

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1/2. 024 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ELECTRICAL CONDUCTIVITY OF MELTS DURING THE REDUCTIVE SMELTING OF
TITANIUM CONCENTRATES -U-
AUTHOR--DENISOV, S.I., DEGTYAREV, V.S., REZNICHENKO, V.A. D
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR METAL. 1970, (1), 80-2
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS
TOPIC TAGS--SLAG, ELECTRICAL CONDUCTIVITY, SMELTING FURNACE, TITANIUM,
TITANIUM OXIDE, MOLTEN METAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0540 STEP NO--UR/0370/70/000/001/0080/0082
CIRC ACCESSION NO--AP0105525
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105525

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAMPLES WERE TAKEN FROM THE FURNACE AT DIFFERENT TIMES DURING THE REDUCTIVE SMELTING OF FE-TI CONCS. THE CONTENT OF FEO VARIED FROM 23.9 TO 3.77PERCENT, THAT OF TI SUB2 O SUB3, FROM 0 TO 24-26PERCENT, AND OF TIO, FROM 0 TO 4PERCENT. THE CHANGES IN ELEC. COND. OF TI SLAGS WERE DETD. AS A FUNCTION OF TEMP. AND THE CONTENT OF FEO. DURING THE MELTING PROCESS, THE ELEC. COND. CHANGED FROM 25-30 OHM-CM FOR THE INITIAL MELT TO 150-170 OHM-CM FOR THE SLAG AT THE OUTPUT WITH 4-5PERCENT FEO.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--A STUDY OF THE ELECTRICAL CONDUCTIVITY OF TITANIUM SLAGS -U-
AUTHOR--(03)-DEGTAREV, V.S., REZNICHENKO, V.A., DENISOV, S.I.
COUNTRY OF INFO--USSR
SOURCE--IZVEST. V.U.Z., TSVETNAYA MET., 1970, (1), 43-47
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SLAG, TITANIUM, ORE BENEFICIATION, BIBLIOGRAPHY, ELECTRIC
CONDUCTIVITY, METAL MELTING, ACTIVATION ENERGY, IRON ORE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0550 STEP NO--UR/0149/70/000/001/0043/0047
CIRC ACCESSION NO--AP0124245
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124245

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRICAL CONDUCTIVITY OF TI
SLAGS OBTAINED AT VARIOUS STAGES IN THE ELECTRIC MELTING OF FE, TI
CONCENTRATES WAS STUDIED. THE CONDUCTIVITY WAS MAINLY OF AN ELECTRONIC
NATURE. THE SPECIFIC ELECTRICAL CONDUCTIVITY AND THE ACTIVATION ENERGY
ASSOCIATED THEREWITH DEPENDED BOTH ON THE TOTAL TI CONTENT AND ON THE
RATIO OF TI SUB2 O SUB3 PLUS TIO TO TIO SUB2. THE CONDUCTIVITY-TEMP.
RELATIONSHIPS ARE OF PARTICULAR IMPORTANCE IN DEVELOPING A METHOD OF
DIFFERENTIAL MELTING FOR FE, TI CONCENTRATES.

UNCLASSIFIED

Nitrogen Compounds

USSR

UDC 542.91:547.963.3

KRAYEVSKIY, A. A., ~~DECTEREV, Ye. V.~~, GOTTIKH, B. P., and NIKOLENKO, L. N.,
Institute of Molecular Biology, Academy of Sciences USSR

"Aminoacyl Derivatives of Nucleosides, Nucleotides and Polynucleotides. 10.
The Feasibility of Using Diethyl Phosphate Imidazolide for the Synthesis of
3'(2')-O-Aminoacyl Nucleotides"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, pp
1730-1736

Abstract: In the search for imidazole compounds which react in an aqueous medium with carboxylic acids to give their imidazolides, the authors studied the interaction of diethyl phosphate imidazolide with acetic acid and tert.-butylhydroxycarbonyl alanine in an aqueous medium and in absolute isopropanol. It was found spectrophotometrically that the corresponding imidazolides are formed. It is shown that it is possible in principle to use diethyl phosphate imidazolide as activating agent for the synthesis of 3'(2')-aminoacyl nucleotides as a result of the reaction between amino acid and nucleotide in an aqueous medium, but that this reactant is not effective enough, since the rate of its hydrolysis is of the same order as the rate of N-acylimidazole hydrolysis.

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USSR

KRAYEVSKIY, A. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No. 8, Aug 71, pp 1730-1736

The authors thank Yu. A. TETERIN for taking PMR spectra.

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USSR

UDC: 621.317.8

AVVAKUMOV, Yu. I., DEGTYAR', L. E., ZELINOVSKIY, Z. I., KERITSKIY, L. P.,
SOLOMYANCHUK, L. K., TSAYREF, K. M., Kishinev, Scientific Research Institute
of Instrument Building

"A Wire-Wound Resistor"

USSR Author's Certificate No 283365, filed 7 Apr 69, published 11 Dec 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V362 P)

Translation: This Author's Certificate introduces a wire-wound resistor which consists of wires connected in parallel and wound on a common form. As a distinguishing feature of the patent, reactance is reduced by using an even number of wires in the winding, connecting the initial ends of even-numbered wires and terminal ends of odd-numbered wires to one of the current leads arranged along the axis of the form, and connecting the initial ends of odd-numbered wires and terminal ends of even-numbered wires to the other current lead.

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DEGTYAREV, YU. G.

" γ -Ray Spectrum of Nb⁹³ During Inelastic Neutron Scattering"

Moscow, Journal of Nuclear Physics, February 1970, pp 241-243

Abstract: Gamma radiation of Nb⁹³ from the reaction (n, n' γ) was studied by means of a Ge(Li) spectrometer. Monoenergetic neutrons were obtained on an electrostatic accelerator in the reaction T(p, n)He³. A heretofore unknown pair of lines, 948 and 977 kev, corresponding to two close states of Nb⁹³, was discovered in the gamma-ray spectrum measured. In the work the position of other low-lying levels of Nb⁹³ was determined more accurately.

The article includes one figure and one table. There are 5 references.

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Therapy

USSR

LOPATINA, Zh. M., BEREZNITSKAYA, L. M., ~~DEGTYAREV, Yu. N.~~, and KOZHEVNIKOVA, L. V., Semipalatinsk Medical Institute

"Prognostic Value of Dysproteinemia and Increased Vascular Permeability in Brucellosis Patients"

Alma-Ata, Zdravookhraneniye Kazakhstana, No 1, 1972, pp 28-30

Abstract: Observation of 531 brucellosis patients showed a relationship between the dynamics of vascular permeability, serum proteins, and the response to therapy. Dysproteinemia and increasing vascular permeability were characteristic of those refractory to therapy. Follow-up examinations of patients after discharge from the hospital revealed that recurrences were most likely among those with continuing dysproteinemia and increased vascular permeability. In most persons examined in a period of clinical remission, serum proteins and vascular permeability were within normal limits. A few exhibited pathological changes -- decrease in albumins, increase in alpha and gamma globulins, and slightly increased vascular permeability -- and it was this group that was mostly likely to have relapses. Thus, dysproteinemia and increased vascular permeability are unfavorable prognostic signs. However, a normal blood picture in a period of remission is not a reliable indicator of complete

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LOPATINA, Zh. M., et al., Zdravookhraneniye Kazakhstana, No 1, 1972, pp 28-30

recovery, for it was observed at this time even in persons who subsequently suffered relapses.

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Pathology

USSR

UDC 616.981.42-071/616.153.96+616.13-008.67-07

LOPATINA, ZH. MO., BEREZNITSKAYA, A. M., DEGTYAREV, YU. N., and KOZHEVNIKOVA, L. V.

"Dynamics of Protein Fractions in the Blood Serum and Vascular Permeability in Patients With Brucellosis"

Moscow, Terapevticheskiy Arkhiv, Vol 43, No 2, Feb. 71, pp 62-67

Abstract: Clinical and laboratory studies of patients with brucellosis were conducted to determine shifts in protein content and vascular permeability as supplementary criteria indicating the activity of brucellosis infection. Total protein content was studied with the use of a refractometer. The serum content of protein fractions by the method of paper electrophoresis and vascular permeability by the rate of semiabsorption of 5 millicuries of I131 from intracutaneous deposits. A total of 531 patients with brucellosis and 50 healthy people in the control group were investigated. An analysis of the data obtained revealed dysproteinemia, hypoalbuminemia, an increase in the blood content of alpha- and gamma-globulins, and increased vascular permeability in the overwhelming majority of patients during the most active periods of brucellosis, especially when on high allergic reactivity and inflammation were also present. A tendency toward normalization of the above

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USSR

LOPATINA, ZH. MO., et al., *Terapevticheskiy Arkhiv*, Vol 43, No 2, Feb 71, pp 62-67

criteria was observed with abatement of clinical manifestations of brucellosis and the remission of the disease. Therapy consisted of the administration of antibiotics -- tetracycline + streptomycin, vaccine in combination with trasylol, prednisolone, aspirin or pyrasolone preparations. All produced positive results. Some of the preparations apparently affected the dynamics of protein shifts and vascular permeability changes; no precise parallelism, however, has been established. After being discharged from the hospital, the patients were kept under observation for periods of 3-4 years. Retardation of the normalization of the protein picture and vascular permeability was noted in a number of patients, indicating the persistence of brucellosis process. The recurrence of the disease occurred most frequently among these patients.

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USSR

UDC: 632.951:634.11

DEGTYAREVA, A. S., and GRODSKIY, V. A., Ukrainian Scientific Research
Institute of Plant Protection

"Effectiveness of New Compounds Against Apple Worm in the Steppe Zone of
the Ukraine"

Moscow, Khimiya v Sel'skom Khozyaystve, no 11, Nov. 70, pp 23-25

Abstract: The selection of insecticides for controlling the apple worm is a very complex task considering that the compounds must differ in type of action (to prevent the emergence of stable populations) and, specifically, be of low toxicity to humans and warm-blooded animals. During the period of 1966-1969 the following compounds were tested: S-9491 (iodophos) (Switzerland); Gardona (SD-8447) (England); Sevin (G.D.R.); carbophos; mesuroi (G.D.R.); metaphos (G.D.R.); methylnitrophos; trichlorometaphos; phosalone (France); Phthalophos (U.S.A.); cyanox (Japan); Cidial (Italy).

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DEGTYAREVA, A. S., et al, Khimiya v Sel'skom Khozyaystve, no 11, Nov 70, pp 23-25

Sevin, a highly effective compound against Lepidoptera caterpillars was used as the standard control compound. Of all tested compounds against the apple worm, phosalene, cidial, metaphos, sevin, Gardona, S-9491, cyanox, phthalophos and imidan were found to be most effective. Trichlorometaphos, trolen, methylnitrophos and metathion failed to provide adequate protection against this pest. LD50 values of all tested compounds are specified. Effectiveness per concentration and duration of effect in various concentrations are cited in tabular form.

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USSR

UDC 666.76:536.421.5

KAYNARSKIY, I. S., DEGTYAREVA, E. V., and ORLOVA, I. G., Ukrainian Scientific Research Institute of Refractory Materials

"Technology for the Production of Refractory Materials From Sintering-Active Materials"

Moscow, Ogneupory, No 12, 1972, pp 41-46

Abstract: The technology for producing refractories from materials capable of active sintering (ASM) is reviewed. Active sintering materials include magnesite, chromite, alumina, chamotte, and others. These materials should be ground to particles 10 μ m in size in order to produce items of low porosity and high thermal stability. A vibrational mill is best suited for grinding ASM, with 1200 vibrations/min and capable of producing 1-1.2 tons magnesite or chromite powder per hour. Different types of presses are recommended for production of briquettes from ASM. Rotary-ring and tunnel-type furnaces are best suited for sintering of items produced from ASM. Refractory materials produced by the suggested method are characterized by low porosity, low shrinkage, a low thermal expansion coefficient, high density, good thermal stability, and high compressive strength. Numerical indicators of the above properties are presented in tables.

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Refractory Materials

USSR

UDC 666.764.32.001.5

KABAKOVA, I. I., DEGTYAREVA, E. V., and KAYNARSKIY, I. S.,
Ukrainian Scientific Research Institute of Refractories

"Extra-Compact Corundum Refractories"

Moscow, Ogneupory, No 1, Jan 71, pp 30-36

Abstract: The article describes a technique which has been developed for the fabrication of extra-compact corundum products from granulated uncalcined briquette, fabricated entirely from finely pulverized uncalcined commercial alumina. The products have a porosity of less than 3 percent, good thermomechanical properties, creep strength, and resistance to reduction by carbon at high temperatures. Calcining conditions and charging methods were determined for products with a linear calcination shrinkage of up to 20 percent. It was found that corundum products can be calcined from granulated stock in a single-row charge according to an accelerated regime lasting about 45 hours, including hold-

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USSR

KABAKOVA, I. I., et al., Ogneupory, No 1, Jan 71, pp 30-36

ing and cooling, as well as in a four-row-high charge in a two-stage process at 1300 and 1750° C. An experimental batch of checker-type products was produced, with none of the products displaying deformation despite shrinkage reaching 19.8-21.2 percent (linear).

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1/2 030 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--CORUNDUM REFRACTORIES -U-
AUTHOR--(03)-KAYNARSKIY, I.S., DEGTYAREVA, E.V., KABAKOVA, I.I.
COUNTRY OF INFO--USSR
SOURCE--OGNEUPORY 1970, 35(4), 46-53
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CORUNDUM REFRACTORY, COMPRESSIVE STRENGTH, GRAIN STRUCTURE,
THERMAL CONTRACTION, THERMAL CONTRACTION, THERMAL STABILITY, CARBON,
ANNEALING, REFRACTORY PRODUCT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0629 STEP NO--UR/0131/70/035/004/0046/0053
CIRC ACCESSION NO--AP0134391
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134391

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS IS ESSENTIALLY A REVIEW WORK PLUS NEW DATA AND RECOMMENDATIONS CONCERNING A NO. OF ASPECTS OF CORUNDUM REFRACTORIES. AMONG THE ITEMS COVERED ARE THE FOLLOWING: DEPENDENCE OF THE AL SUB2 O SUB3 CONTENT IN THE ARTICLES ON THE ADDN. OF TECH. GRADE ALUMINA TO NATURAL RAW MATERIAL CONTG. 35, 40, AND 45PERCENT AL SUB2 O SUB3; COMPRESSION STRENGTH OF CORUNDUM PRODUCTS; CHANGE IN THE GRAIN COMPN. OF BALL BRIQUET MADE OF FINE GROUND ALUMINA AFTER FIRING IN A LAB. ROTARY FURNACE AT VARIOUS TEMPS.; DEPENDENCE OF THE SHRINKAGE OF SUCH A BRIQUET ON THE FINAL FIRING TEMP. AT VARIOUS HOLDING TIMES; SHRINKAGE DURING 2-STAGE ANNEALING (1300 AND 1750DEGREES) OF SPECIFIC DENSE CORUNDUM ARTICLES MADE OF GRANULATED BODIES; TABULATION OF PROPERTIES AND CHARACTERISTICS OF CORUNDUM CERAMICS; DEPENDENCE OF HEAT COND. COEFFS. OF CORUNDUM REFRACTORIES ON THEIR AV. HEATING TEMP. AND THE POROSITY; THERMOMECH. PROPERTIES OF CORUNDUM REFRACTORIES; AND THERMOPHYS. PROPERTIES AND STABILITY TO C OF CORUNDUM REFRACTORIES. FACILITY: UKR. NAUCH.-ISSLED. INST. OGNEUPOROV, KHARKOV, USSR.

UNCLASSIFIED

USSR

AFONIKOVA, N. S., DEGTYAREVA, V. F. LITVIN, YU. A., RABIN'KIN, A. G.,
SAKOV, YU. A.

"Superconductivity and the Structure of Titanium Alloys with Niobium Subjected
to Hydrostatic Pressures of up to 120 kilobars"

Leningrad, Fizika Tverdogo tela, Vol 15, No 4, 1973, pp 1096-1101

Abstract: A study was made of the structure and superconducting properties of Ti alloys with 10-90 atomic percent Nb subjected to pressures of up to 120 kilobars. Radiographic analysis indicated that in alloys with 10 and 20 atomic percent Nb under the effect of 30 and 50 kilobars of pressure, respectively, an ω -phase is formed and retained after loading in the metastable state at $P = 1$ atmosphere. This is accompanied by a significant drop in T_c of the alloys. In an alloy with 10 atomic percent Nb after treatment at $P = 120$ kilobars in the metastable state, the structure of 1 ω -phase was recorded. The structure and lattice parameters of the ω -phase obtained as a result of the pressure or ordinary heat treatment are similar; however, the formation of the ω -phase during heat treatment leads to a rise in T_c . A study was made of the possible causes of the different effect on T_c of the processes of formation of the ω -phase under pressure or during heat treatment. In alloys with 30 and 40 atomic percent Nb, the $P \approx 120$ kilobar effect also caused a
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USSR

AFONIKOVA, N. S., et al., Fizika Tverdogo tela, Vol 15, No 4, 1973, pp 1096-1101

noticeable drop in T_c . This indicates the formation of an ω -phase in them which, as is known, does not occur in such alloys for any heat treatment conditions.

Conclusions are drawn from the presented data regarding the boundaries of the region of existence of the ω -phase in the titanium-niobium alloys at room temperature.

A schematic is presented of the region of stability of the ω -phase in P-C-coordinates at 300° K. The P-C-plane is divided into three regions: region I where there are structures corresponding to the initial state of the alloys after quenching and where the application of pressure still does not lead to the occurrence of the ω -phase; region II where the ω -phase exists combined with the initial phases and region III where one ω -phase is stable.

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- 53 -

Corrosion

USSR

UDC: 620.199

D
TSINMAN, A. I., DECTYAREVA, V. K., NEYMAN, N. S., KASSINSKAYA, L. L., KUZUB, V. S., and MURASHKINA, A. A., Severodonetsk Branch, State Institute of the Nitrogen Industry; Zhdanov Plant of Heavy Machinery

"Determining the Tendency of Kh18N10T Chromium Nickel Steel to Intergranular Corrosion by the Method of Potentiostatic Etching"

Moscow, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 475-478

Abstract: Commercial melts of Kh18N10T and OKh18N10T steels were used for elaborating the process of potentiostatic etching in order to determine the tendency of steel to intergranular corrosion (TIC). A total of 88 experimental melts have shown agreement of results of potentiostatic etching (PE) with the "AM" method specified in GOST 6032-58. The new method also makes it possible to observe the nature of dissolution on a longitudinal polished end. A curve in the original article shows anodic polarization of OKh18N10T steel at potential application rate of 1 v/hr in 20% H₂SO₄, 50% H₂SO₄, 1n H₂SO₄ + 0.003 n KCNS, 1n H₂SO₄ + 0.05 KCNS. Another figure showing the anodic polarization

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USSR

TSEMAN, A. I., et al, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 475-478

curve obtained on OKh18N10T steel in 50% H_2SO_4 at a potential application rate of 1 v/hr reflects the TIC of the steel. At a potential of 0.28 v a longitudinal ground end of steel with TIC, after 30 minutes of etching, showed a clear lattice of etched grain boundaries. For steels with a strongly pronounced TIC the intergranular etching pattern appears within 10--15 minutes.

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172 010 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--SYNTHESIS AND REACTIONS OF N,N,BIS,2,THIOCYANATOETHYL,ARYLAMINES
-U-
AUTHOR--(G2)--LEGUTIS, YU.A., DUBINSKAYE, D.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1003-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, CHLORINATED ORGANIC COMPOUND, BROMINATED
ORGANIC COMPOUND, BENZENE DERIVATIVE, THIOL, CYANATE, AROMATIC AMINE,
AMINE DERIVATIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1343 STEP NO--UR/0366/70/006/005/1003/1005
CIRC ACCESSION NO--AP0135017
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0135017

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF P,RC SUB6 H SUB4
N(CH SUB2 CH SUB2 CL) SUB2 (I) WITH KSCN GAVE P,RC SUB6 H SUB4 N(CH SUB2
CH SUB2 SCN) SUB2 (II) (R EQUALS H, ME, MEG, OR BR), WHICH HAVE WEAK
ALKYLATING PROPERTIES AND NO CYSTOSTATIC ACTIVITY. THE ACTION OF ALK.
SOLNS. ON II GAVE N, (RC SUB6 H SUB4
SUBSTITUTED), TETRAHYDRO, 3H, 1, 2, 5, DITHIAZEPINES, WHICH WERE ALSO PREPD.
DIRECTLY FROM I BY REACTION WITH NA SUB2 S SUB2. FACILITY:
KAUNAS. POLITEKH. INST., KAUNAS, USSR.

UNCLASSIFIED

USSR

UDC 678.026.3

POLYAKOVA, V. M., DEINEGA, Yu. F. (Institute of Colloid Chemistry and the Chemistry of Water, UkrSSR Academy of Sciences)

"Preparation of Metallo-Polymer Coatings by Electrodeposition on a Cathode"

Kiev, Ukrainskii Khimicheskii Zhurnal, Vol 39, No 10, 1973, pp 988-992

Abstract: A new method is described for making metal-polymer coatings, these being formed by electrodeposition of polyelectrolytes with weakly basic properties and metals on a cathode. The polymer binders used were amino-formaldehyde resins. The mechanism of deposition of the polymer binder and its interaction with the metal at the time of deposition are discussed.

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USSR

UDC 546.882-31

KORNILOV, I. I., DEKANENKO, V. M., and VAVILOVA, V. V., Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR

"Effect of Titanium on Stabilization of Niobium Suboxides"

Moscow, Neorganicheskiye Materialy, Vol 9, No 11, 1973, pp 1964-1968

Abstract: The effect of titanium on the oxidizability of niobium was previously studied and a concept put forth that the increased heat resistance occurs due to stabilization of the suboxides at temperature above 700°C. In this work, alloys of niobium with oxygen (from 1 to 42 at% oxygen) were studied in which 2 at% titanium had been added. Alloying of niobium with titanium leads to an increase in the maximum content in the solid solution from 6 to 8 at% after quenching. Oxygen content in solid solutions after annealing at 500 and 700°C was 7 and 6 at%, respectively. At 500°C, Nb₂O decomposes from the solid solution as an excess phase during annealing and, at 700°C and above, NbO is the decomposed excess phase. After annealing at 300°C there was noted a significant widening of niobium lines on neutrograms which may be the result of decomposition of a supersaturated solid solution with the formation of the suboxide of the type Nb₆O. This unordinary behavior of oxygen in niobium with 2 at% Ti should render an effect on the mechanical properties of alloys of

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USSR

KORNILOV, I. I., et al., Neorganicheskiye Materialy, Vol 9, No 11, 1973,
pp 1964-1968

niobium with titanium and an increased oxygen content. 3 figures, 8 bibliographic references.

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USSR

UDC 681.3.06.51

DEKANOSIDZE, Ye. N.

"Use of Algorithmic Language ALGOL-68 for Description of Economic Problems"

Tr. Vychisl. Tsentra. AN Gruz SSR [Works of Computer Center, Academy of Sciences, Georgian SSR], Vol, 9, No. 3, 1970, pp 5-15 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V637 by V. Mikheyev).

Translation: The expediency of construction of translators from problem oriented languages is analyzed, considering the availability of a universal language and a translator for this language for new computers. It is considered more expedient to translate algorithms in the problem oriented languages into the universal language with subsequent translation. With this purpose in mind, the structures of problem oriented languages with equivalent structures to the universal language is studied and algorithms for translation of the former into the latter are presented on the example of the following economic problems: composition of a table indicating the total and mean working time, calculation of wages, determination of requirements for materials. The algorithms are formulated as procedures. Conversion problems are not studied. The problem oriented languages in the examples are languages for description of economic problems, ALGEK and ALGEM.

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USSR

UDC 615.28:547.337.3

SHAPILOV, O. D., RACHINSKIY, F. YU., OSIPYAN, V. T., DEKELBAUM, A. B., POTANENKO, T. G., KRUMENINA, A. A., Military Medical Academy imeni S. M. Kirov, Leningrad

"Hexamethyleneimonium Compounds Containing Alkoxy-, Hydroxy- and Cyanoalkyl Substituents at the Quaternary Nitrogen Atom, and Their Bactericidal Properties"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 2, Feb 71, Vol 5, pp 19-22

Abstract: Hexamethyleneimonium compounds with alkyl, carb-alkoxymethyl, phenoxyethyl and other substituents with 17 to 21 carbon atoms at the N exhibit marked bactericidal action; ammonium compounds with alkoxymethyl groups at the quaternary nitrogen atom are both good bactericides and highly water-soluble.

The author obtained a number of hexamethylimonium compounds by alkylation of tertiary derivatives of hexamethylenimine, and also some highly water-soluble compounds through synthesis of substances 1/2

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USSR

SHAPILOV, O. D., et al, Khimiko-Farmatsevticheskiy Zhurnal,
No 2, Feb 71, Vol 5, pp 19-22

with cyanoethyl and cyanomethyl groups at the quaternary nitrogen atom. Thirty-six compounds in all were studied for bactericidal and other properties.

Some 30 of these were quite effective against E. coli and Staphylococcus aureus, and were moderately or highly water-soluble. Physical and bactericidal properties are given in the paper.

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AN0017111

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UR9013

AUTHOR-- DEKHANOV, N., DEPUTY DIRECTOR FOR RESEARCH OF THE
~~UKRNIISPETSSTAL~~, MERITOREOUS METALLURGICAL ENGINEER
OF THE UKSSR, PROFESSOR, DOCTOR OF TECHNICAL SCIENCES

TITLE-- TIED UP MILLIONS

NEWSPAPER-- PRAVDA UKRAINY, FEBRUARY 10, 1970, P 2, COLS 4-8

ABSTRACT-- THE AUTHOR AIRS OUT GRIEVANCES AGAINST THE MINISTERIAL
RED TAPE WHICH HOLDS BACK SOME DEVELOPMENTS AT THE UKRAINIAN
SCIENTIFIC-RESEARCH INSTITUTE FOR SPECIAL STEELS, ALLOYS AND FERRO
ALLOYS.

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18

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ENZYMATIC DIAGNOSIS OF ACUTE PANCREATITIS -U-
AUTHOR--(04)-LEVITSKIY, A.P., SYNOVETS, A.S., DEKHTYAR, A.L., TSVIRKUN,
F.M.
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 2, PP 94-98
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PANCREAS, ENZYME ACTIVITY, AMYLASE, BLOOD SERUM, URINE,
DIAGNOSTIC METHOD, DIGESTIVE SYSTEM DISEASE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/1328 STEP NO--UR/0531/70/000/002/0094/0098
CIRC ACCESSION NO--AP0054212
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054212

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS INVESTIGATED THE ACTIVITY OF AMYLASE (SMITH AND ROE MICROMETHOD), PROTEASE UTKINYKH LYNBOVTSEVYKH METHOD IN SHIERGE'S MODIFICATION) AND LIPASE (LEVITSKY'S COLORIMETRIC MICROMETHOD) IN THE BLOOD SERUM OF CATS WITH EXPERIMENTAL ACUTE PANCREATITIS. THERE WERE A SIGNIFICANT RISE OF THE ACTIVITY OF PANCREATIC LIPASE, INESSENTIAL INCREASE OF THE PROTEASE LEVEL, SHORT TERM RISE AND SUBSEQUENT SHARP DECLINE OF THE AMYLASE ACTIVITY. IN THE DETERMINATION OF THE REFERRED TO ENZYMES IN THE BLOOD SERUM AND AMYLASE IN THE URINE OF PATIENTS WITH ACUTE PANCREATITIS THE AUTHORS NOTED A SIGNIFICANT INCREASE IN THE ACTIVITY OF LIPASE AND AMYLASE AND AN INSIGNIFICANT INCREASE OF THE PROTEASE ACTIVITY. A STABLE ACTIVITY RISE WAS OBSERVED IN RESPECT TO LIPASE, THE BLOOD AMYLASE ACTIVITY SEVERAL DAYS AFTER THE ONSET OF THE DISEASE DROPPED ALMOST TO NORMAL VALUES, HOWEVER THE URINARY LEVEL OF AMYLASE WAS STATISTICALLY SIGNIFICANT ABOVE NORMAL LEVELS. THE AUTHORS ALSO DETERMINED THE BLOOD SERUM ACTIVITY OF LIPASE AND AMYLASE, AND URINARY LEVEL OF AMYLASE IN PATIENTS WITH ACUTE CHOLECYSTITIS, APPENDICITIS AND GASTRODUODENAL PEPTIC ULCER. THE NONSPECIFICITY OF THE ACTIVITY OF VLOOD AMYLASE WAS ESTABLISHED. THE INCIDENCE OF RISE OF THE BLOOD SERUM ACTIVITY OF LIPASE IN ACUTE PANCREATITIS AMOUNTED TO 90PERCENT OF CASES, THAT OF URINARY AMYLASE, 70PERCENT. FOR THE DIAGNOSIS OF ACUTE PANCREATITIS THE AUTHORS RECOMMEND THE DETERMINATION OF BLOOD SERUM PANCREATIC LIPASE ALONG WITH THAT OF URINARY AMYLASE.

UNCLASSIFIED

USSR

DEKHTYAR, A. S., VARVAK, M. SH.

"Limiting Equilibrium of Flat Shells under the Effect of a Load Distributed over Part of the Surface"

Issled. po stroit. mekh (Structural Mechanics Research), Tbilisi, Metsniyereba Press, 1970, pp 94-103 (from RZh-Mekhanika, No 11, Nov 70, Abstract No 11V409)

Translation: This article contains a study of the limiting equilibrium of freely supported square and round shells in the plan view made of an ideal rigid-plastic material. It is assumed that exhaustion of the supporting capacity is accompanied by the formation of plastic hinges along certain lines on the surface. The upper bound of the supporting capacity is found by the kinematic method of the theory of limiting equilibrium. Exhaustion of the supporting capacity is also studied in connection with stamping of the shell.

The mid surface of a flat shell which is square in the plan view is assumed in the form of a paraboloid of rotation

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$$z = f(x^2 + y^2)/a^2,$$

USSR

DEKHTYAR, A. S., et al., Issled. po stroit. mekh (Structural Mechanics Research), Tbilisi, Metsniyereba Press, 1970, pp 94-103

where $2f$ is the rise of the shell at the center; $2a$ is the length of the side of the shell in the plan view. The shell has a constant thickness δ . Its edges can be shifted freely in the horizontal direction. The vertical load is distributed uniformly over part of the surface. The horizontal projection of the loaded area has the shape of a square, and it is arranged symmetrically with respect to the center of the shell. The shell material follows the idealized Mises diagram. In addition, it is assumed that $\sigma^+ \ll \sigma^-$. Here σ^+ and σ^- are the tensile and compressive yield strengths of the material, respectively.

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- 85 -

Acc. Nr: **A70046315** Abstracting Service: **5/76** Ref. Code: **LR0441**
INTERNAT. AEROSPACE ABST.

D

A70-23388 # Minimum edge reinforcement of shells with an axial symmetry (Minimal'ne konturne pidkriplennia osesimetrichnikh obolonok). A. S. Dekhtiar and M. Sh. Varvak (Naukovo-Doslidnii Institut Budivel'nikh Konstruktsii, Ukrainian SSR). *Akademiia Nauk Ukrains'koi RSR, Dopovidi, Seriya A-Fiziko-Tekhnichni i Matematichni Nauki*, vol. 32, Jan. 1970, p. 48-50. In Ukrainian.

The influence of contour mobility is investigated upon the load-carrying capacity of rigid-plastic thin shells of revolution. If the edges are fixed and cannot move in horizontal direction, the limit load intensity is increased by 2-3 times. A minimum reinforcement value is established which leads to such an immovable contour.

(Author)

ACS

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REEL/FRAME
19781475

18

USSR

UDC: 616.22-008.4-789.28-78

PUPKO, I. D., ULASHKEVICH, Yu. V., MAGRACHEV, A. Z., BORONETS, V. P., DOLGOV, V. K.,
LAPSHIN, V. A., DEKHTYAR, B. S., VAYNSHTEYN, A. M.

"A Voice-Forming Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 28,
1970, Soviet Patent No 280548, Class 21, filed 9 Jun 69, p 42

Abstract: This Author's Certificate introduces a voice-forming device which contains a main current generator, projector and self-contained power supply. As a distinguishing feature of the patent, the sound spectrum of the projected oscillations is approximated to that of natural speech by adding a noise generator, a noise amplifier, and an operating mode commutator.

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USSR

UDC 539.2

DEKHTYAR, I. Ya., and NEMOSHKALENKO, V. V. Elektronnaya Struktura i Elektronnyye Svoystva Perekhodnykh Metallov i ikh Splavov (Electron Structure and Electronic Properties of Transition Metals and Their Alloys, Izd-vo "Naukova Dumka", Kiev, 1971, 304 pp

Translation of Annotation: This monograph deals with the most recent investigations in the field of the electron structure of transition metals and their alloys. Reported and analyzed are recent models of the electron structure of transition metals, results obtained with the help of new physical investigation methods of the electron structure of transition metals (gamma-resonance spectroscopy, positron spectroscopy, and others), and such classical methods as x-ray spectroscopy, electron heat capacity, and magnetic susceptibility. Laboratory results obtained by the authors are discussed. The book is intended for physicists working in solid-state physics, materials specialists working in the development of new materials, aspirants and students taking advanced courses in physics, metal physics, and metallurgy.

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USSR

DEKHTYAR, I. Ya. and NEMOSHKALENKO, V. V., Izd-vo "Naukova Dumka", 1971, 304 pp

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USSR.

DEKHTYAR, I. Ya. and NEMOSHKALENKO, V. V., Izd-vo "Naukova Dumka", 1971, 304 pp

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USSR

DEKHTYAR, I. Ya. and NEMOSHKALENKO, V. V., Izd-vo "Naukova Dumka", 1971, 304 pp

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USSR

DEKHTYAR, I. Ya. and NEMOSHKALENKO, V. V., Izd-vo "Naukova Dumka", 1971, 304 pp

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Acc. Nr:

AP0046687

Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:

UR 0185

A70-23192 # Mobility increase of atoms in metal systems during the irradiation processes (Zbil'shennia rukhomosti atomiv u metalovich sistemakh u protsesi oprominiuvannia). I. Va. Dekhtyar and A. M. Shalaev (Akademiia Nauk Ukrain's'koi RSR, Institut Metalofiziki, Kiev, Ukrainian SSR). *Ukrains'kii Fizichnii Zhurnal*, vol. 15, Jan. 1970, p. 76-79; 20 refs. In Ukrainian.

Review of the current knowledge concerning the diffusion theory and the effect of an irradiation on the diffusion processes. It is suggested that the change in the energy states of electrons during the irradiation enhances the diffusion mobility of atoms. Z.W.

A.S

REEL/FRAME
19782003

15

USSR

UDC 669.017:538.22

DEKHTYAR, M. V., Moscow State University imeni M. V. Lomonosov

"Temperature Dependence of Magnetic Properties of Ferrocobalt Alloy Near and Below the Critical Temperature"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 4, Apr 72, pp 746-751

Abstract: A study was made of the kinetics in the process of development of the ordered structure α -FeCo and the temperature dependence of the magnetic properties of a ferrocobalt alloy with 50 at.% Co. The anomalous character of this dependence, found in the temperature interval of 550-730°C, is analyzed. It is shown that the recrystallization, structural stresses, magnetic anisotropy, and magnetostriction cannot cause the anomalous temperature dependence. According to J. B. Goodenough ("Magnetism and the Chemical Bond," N. Y.-Id., 1963), this anomaly can be explained by the metamagnetic character of the exchange reaction in ordered alloys. Four illustrations, twenty-two bibliographic references.

1/1

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1/2 016
TITLE--EFFECT OF ORDERING ON MAGNETIC PROPERTIES OF FCCD WITH AN
EQUIATOMIC COMPOSITION -U-
AUTHOR--DEKHTYAR, M.V.
COUNTRY OF INFO--USSR
SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1) 120-3
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SATURATION MAGNETIZATION, COBALT IRON ALLOY, ORDERED ALLOY,
ALLOY HEAT TREATMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/1341
CIRC ACCESSION NO--AP0107814
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UNCLASSIFIED
PROCESSING DATE--11SEP70
STEP NO--UR/0185/70/015/001/0120/0123

2/2 016

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107814

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MAGNETIC PROPERTIES (SATN. MAGNETIZATION) OF FeCo ALLOY CHANGED WITH HEATING, SHOWING 2 MAX., AT 550 AND 730 DEGREES. THIS OCCURS AS A RESULT OF FORMATION OF 2 DIFFERENT SUPERSTRUCTURES IN THE ALLOY.

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UNCLASSIFIED

USSR

POVELYTSYA, F. D., ~~DEKHTYAR, N. V.~~ and GURAL', A. G., Kiev Scientific Research Institute for the Advanced Training of Physicians, Kiev

"The Effect of Antibiotics on Immunity in Brucellosis"

Kiev, Mikrobiologicheskii Zhurnal, Vol 33, No 6, Nov/Dec 71, pp 786-787

Abstract: A number of investigators have noted that therapy of bacterial infections with antibiotics inhibits the development of postinfection immunity. The effects of intramuscular administration of streptomycin on the specific and nonspecific immunity of rabbits infected experimentally by intramuscular injection of Br. abortus 544 were studied. The agglutinin titer in Wright's reaction, the complement titer of the serum, the lysozyme level, the bactericidal activity of the blood serum, and the concentration of sialic acids were determined. The results showed that streptomycin lowered the specific immunity when administered in the first days after infection, because it reduced the amount of antibodies that formed, as indicated by the agglutinin titer. It did not affect the nonspecific immunity, because the indexes of this immunity (the complement titer, the bactericidal activity of the serum, the lysozyme level, and the sialic acid content) were not changed vs. those of infected animals not treated with the antibiotic.

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DEKHTYAREV, V. L.

JPRS 59266

12 June 1973

UDC: 621.313.12:538.4:531.95

Thermodynamic Cycles of Atomic Power Plants with MHD-Generators

Article by V. L. Dekhtyarev, V. N. Kuznetsov, V. V. Stetsko, and I. Z. Kopteva. Teoriya i Eksperiment v Energetike, Russkaya Fizika, Vol. 11, No. 2, 1973, pp. 361-369.

The possibility in principle of achieving high temperatures of the coolant in high-temperature gas-cooled reactors leads to a need for investigation of the prospects of use of gaseous MHD-generators at atomic power plants (1-3). The first stage in solving this task is the selection of very rational thermodynamic cycles.

Usually considered are temperature levels insufficient to obtain the thermal ionization needed to assure electric conductivity of the working medium. Therefore MHD-generators based on non-equilibrium plasma are primarily investigated.

To create the necessary electric conductivity the coolant pressure at the reactor outlet must be lower than the optimal from the point of view of the planning of the reactor, the compressor and the heat exchangers.

In the present work helium with an ionized additive at a pressure of 1.0 mmHg and temperature of 7000, 7200 and 7500°K was taken as the working medium of the MHD-generator. When helium is used its pressure in the reactor can be increased to 3.0-4.0 mmHg [3]. However, because of heat-transfer problems much worse than those of helium, the increase of pressure does not lead to reduction of the heat-exchange surfaces.

A thermodynamically very simple cycle with an MHD-generator can be organized much like the cycle of a closed-cycle gas-turbine power plant, in which an MHD-generator is included in place of the gas turbine. In such a cycle the power coefficient factor $\theta = Q_{\text{reg}} [4]$ has high values. Therefore to

USSR

DEKHTYARENKO, V. A.

"Algorithm for Formation and Processing of Expert Evaluations in the Solution of Problems of Prediction in Complex Systems"

Kibernetika i vuz. [Cybernetics and the University -- Collection of Works], No 4, Tomsk, 1971, pp 108-115, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V464).

NO ABSTRACT.

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USSR

STAROSEL'SKIY, V. A., DEKHTYARENKO, V. A.

"Use of Heuristic Methods in Modeling and Optimization of Complex Systems"

Kibernetika i vuz [Cybernetics and the University -- Collection of Works],
No 4, Tomsk University Press, Tomsk, 1971, pp 116-122, (Translated from
Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V640 from the
Resume).

Translation: Various approaches are discussed to the problem of finding
an adequate mathematical description for complex systems, the area of
application of heuristic methods in combination with statistical modeling.

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USSR

UDC 669.243

GAL'NBK, A. A., YUZHANINOV, I. A., DEKOPOV, YU. D., and
ZHELDYBIN, O. I.,

"Examination of the Process of Continuous Converter Blowing of
Ferronickel"

Moscow, Tsvetnyye Metally, No 2, Feb 71, pp 18-21

Abstract: The article considers results of the first phase of investigations of continuous converter blowing of ferronickel conducted at the Leningrad Mining Institute in cooperation with the "Gipronikel" Institute. The basic regime characteristics of the process are determined. Conversion to the continuous Bessemer process eliminates many shortcomings of the periodic process carried out in vertical converters. Blowing is carried out in the following manner: after arc firing of the furnace up to 800-1000°C, the bath is set by discharging lump electric-furnace ferronickel. Then the bath is preheated to 1500-1550°C and the arc is disconnected. The electrodes are removed from the furnace, the electrode holes are filled with refractory chokes,
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USSR

GAL'NBK, A. A., et al., Tsvetnyye Metally, No 2, Feb 71, pp 18-21

and positioning of the tuyere blast is conducted. Blowing begins at a bath temperature of 1350-1450°C. The blast in experiments varied from 1.5 to 3.2 m³/min at different degrees of carburi-
zation.

2/2

SEKSNE, Ya. K.

50: JPRS 59879
14 June 73

SELECTIVE GROWTH OF EPITAXIAL STRUCTURES OF GERMANIUM AND SILICON

Article by E. O. Tischenko, Ya. K. Seksne, Ya. A. Sorokina, L. Ya. Kuliyevskaya, P. P. Kalinich, Novosibirsk, Tomskiy Rossiya i Struktural'no-Materialisticheskii Slovar Poluprovodnikov - Rudy Simozium, Kuznetsk, Part 2, 1969, pp. 135-142.

In the development of various semiconductor devices, local epitaxial structures are of great interest. One of the most prospective means of obtaining them is the selective growth of epitaxial layers. In a number of papers [1, 2, 3, 4], the selective growth of the silicon is described. There are no detailed data with respect to germanium in the literature; however, there local epitaxial structures even of this material are of significant interest in practice.

This paper is devoted to the investigated optimal conditions of selective growth of the epitaxial layers of germanium and silicon.

The local epitaxial structures must satisfy the following requirements:

- 1) The surface must be flat, that is, the selectively grown epitaxial regions must not be raised above the remaining surface of the substrate or be in the form of depressions;
- 2) The interface of the local epitaxial regions and the substrate must be quite perfect and not cause the formation of defects in the epitaxial regions during growth;
- 3) The local epitaxial structures must have uniform electrophysical properties with respect to their plate.

The selective growth of both germanium and silicon was carried out in the windows of a protective mask made of silicon dioxide. The germanium and silicon plates cut from the mask were round and polished to surface finish class 14 using SA-1 diamond micropowder. The crystallographic orientation of the substrate was (111). After depriming and chemical pickling, a layer of silicon dioxide was applied to the plates. The dioxide layer was applied to the germanium plates by thermal decomposition of tetraethoxysilane in an atmosphere of pure argon at a temperature of -800° C. The silicon plates were oxidized in wet or dry oxygen at a temperature of -1,200 to 1,300° C.

USSR

UDC 577.4

DEKSNIS, G. K.

"Certain Problems in the Coding of the Internal States of an Asynchronous Finite Automaton"

V sb. Vopr. sinteza konechn. avtomatov (Problems in the Synthesis of Finite Automata -- Collection of Works), Riga, "Zinatne", 1972, pp 9-19 (from RZh-Matematika, No 9, Sep 72, Abstract No 9V404)

Translation: An asynchronous finite automaton is coded according to separate input signals r_l ($l = 1, 2, \dots, \beta$) in order to avoid critical conflicts.

The coding of various k -sets of states of the automaton by coded words with a minimal spread of unity is discussed. Rules for determining the length of a compound code word

$$(n = \sum_{l=1}^{\beta} n_l \text{ by the Sagalovich method})$$

are explained. Certain improvements in the Lewy method are proposed. An algorithm for finding identically coded columns of the transition table is developed. Authors abstract.

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USSR

UDC 577.4

DEKSNIS, G. K.

"Some Problems of Encoding the Internal States of an Asynchronous Finite Automaton"

V sb. Vopr. sinteza konechn. avtomatov (Problems of Synthesizing Finite Automata -- collection of works), Riga, Zinatne Press, 1972, pp 9-19 (from RZh-Kiber-netika, No 9, Sep 72, Abstract No 9V404)

Translation: An asynchronous finite automaton is encoded in accordance with individual input signals r_ℓ ($\ell = 1, 2, \dots, \beta$) in order to eliminate critical controversies.

A study was made of the encoding of various k -sets of states of an automaton by code words with minimum distance of one. The laws of determination of the length of the composite code word are discovered ($n = \sum_{\ell=1}^{\beta} n_\ell$ by the Sagalovich method). Some improvements of the L'yu method are proposed. An algorithm is developed for searching identically encoded columns of a transition table.

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USSR

UDC 620.10

DEL', G. D., Doctor of Technical Sciences, Professor, and TSUKUBLINA, K. N.,
Graduate Student, Voronezh Polytechnical Institute

"Experimental-Calculation Determination of Stresses During Axisymmetrical
Plastic Deformation"

Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 11, 1971,
pp 8-13.

ABSTRACT: This article presents a method for determination of stresses during axisymmetrical plastic deformation which does not include the assumption of equality of circumferential stress to one of the other two main stresses. Experimental data for determination of stresses used include the field of circumferential logarithmic deformations, the field of stress intensities and deformation intensities. The method consists of numerical solution of a hyperbolic system of equations using the experimental data. The method is used to determine the stressed state upon penetration of a spherical stamp and a blunt cone (angle at tip 120°) with and without consideration of forces of friction.

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USSR

UDC 539.374

OGORODNIKOV, V. A., DEL', V. D.

"Deformed State Under the Sagging of Hollow Cylinders"

Izv. Tomsk. politekhn. in-ta (News of Tomsk Polytechnical Institute), 1972, Vol. 225, pp 48-52 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 8V391)

Translation: The results of an experimental study of the deformed state arising under the sagging of hollow cylinders are presented. The stress intensity and the deformation intensity distributions were measured when studying the axisymmetric deformed state by measuring the hardness of the sample using experimental calibration graphs for hardness vs. stress intensity. The values of the deformation components were determined by using differential equations for the axisymmetric deformation process and the values of the deformations on the inner surface of the hollow cylinder were used as a boundary condition. The values of deformations in a sagged sample were determined by applying numerical methods on the "Minsk-1" computer. Tables are given showing the dimensions of the deformed samples, the degree of their sag, and the values of their circumferential deformations obtained by computation and by measurements in the sample. Graphs

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USSR

OGORODNIKOV, V. A., DEL', V. D., Izv. Tomsk. politekhn. in-ta, 1972,
Vol. 225, pp 48-52

of the distribution of radial and circumferential deformations are constructed for different degrees of sag and the dimensions of the sagged hollow cylinders. It is pointed out that the Haar-Karman hypothesis on the equality of circumferential stress to one of the major stresses in the meridional plane is contradicted by the experimental data of the article. Ye. M. Tret'yakov.

USSR

UDC: 8.74

DEL', V. D., KALINICHENKO, G. D.

"Floating Decimal Programming for the Minsk-1 Digital Computer. Textbook"

Programmirovaniye s plavayushchey zapyatoy dlya tsifrovoy vychislitel'noy mashiny Minsk-1. Uchebn. posobiye (cf. English above), Tomsk Polytechnical Institute, Tomsk, 1971, 49 pp, 20 k., mimeo. (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V950 K)

[No abstract]

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--STANDARDIZATION IN TELEVISION: HISTORY AND PROSPECTS -U-
AUTHOR--DELBOR, I. *P*
COUNTRY OF INFO--USSR, WORLD WIDE
SOURCE--STANDARTY I KACHESTVO, 1970, NR 4, PP 88-91
DATE PUBLISHED--70

SUBJECT AREAS--NAVIGATION, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--TV SYSTEM, TECHNICAL STANDARD, INTERNATIONAL AGREEMENT

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/1764 STEP NU--UR/0422/70/000/004/0088/0091
CIRC ACCESSION NO--AP0101811
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0101811

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DESCRIBES THE DEVELOPMENT HISTORY OF STANDARDIZATION AND NATIONAL STANDARD SPECIFICATIONS IN THE FIELD OF TELEVISION; IT ALSO ANALYSES THE PROSPECTS FOR AN INTERNATIONAL STANDARDIZATION DEVELOPMENT IN THIS DOMAIN.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EXPERIMENTAL YAWS AND ELECTRON MICROSCOPY OF TREPONEMA PERTENUE -U-

AUTHOR--OVCHINNIKOV, N.M., DELEKTORSKIY, V.V., KENIGSBERG, T.L.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 4, PP 42-49

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ELECTRON MICROSCOPY, RABBIT, TUBERCULOSIS, INOCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1733

STEP NO--UR/0206/70/000/004/0042/0049

CIPC ACCESSION NO--AP0109694

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109694

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RABBITS WERE INOCULATED INTRACUTANEOUSLY IN THE SCROTUM AND INTRATESTICULARLY AND GOLDEN HAMSTERS INTRACUTANEOUSLY IN THE INGUINAL AREA WITH A SUSPENSION OF TREPONEMA PERTENUE. HAMSTERS FAILED TO SHOW ANY CLINICAL MANIFESTATIONS WHEREAS RABBITS, REGARDLESS OF THE WAY OF INOCULATION, DEVELOPED ON SCROTUM DENSE TUBERCULOUS NODES MOST FREQUENT ON TUNICA DARTOS VARYING IN SIZE FROM A MILLET GRAIN TO A CHERRY OR EVEN A PLUM. WASSERMANN, KAHN, CYTOCHOLIN TESTS, AS WELL AS IMMOBILIZATION AND IMMUNOFLUORESCENCE TESTS BECAME POSITIVE. EXAMINATION OF TREPONEMA PERTENUE IN THE DARK FIELD AND IN ELECTRON MICROSCOPE USING NEGATIVE STAINING AND ULTRATHIN SECTION METHODS REVEALED GREAT SIMILARITY TO T. PALLIDUM, T. PERTENUE WAS FOUND TO HAVE CYSTS, BUT THEY HAD A ONE OR TWO LAYER COMMON MEMBRANE AND NOT A THREE LAYER MEMBRANE LIKE THE FORMER. THE COVER OF T. PALLIDUM IS MORE MANIFEST, THE ENDS OF T. PALLIDUM ARE MORE EXTENDED AND THE DISTANCE TO BLEFAROPLASTS IS LONGER, BUT THESE DISTINCTIVE SIGNS ARE UNRELIABLE. FACILITY: MIKROBIOLOGICHESKIY OTDEL TSENTRAL'NOGO N, I KOZHNO, VENEROLOG INSTITUTA MINISTERSTVA ZDRAVOOKHRANENIYA SSSR, MOSCOW.

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UNCLASSIFIED

USSR

DELIMARSKIY, YU. K., Member, Academy of Sciences USSR, Editor-in-Chief

Elektrokhimicheskoye Rafinirovaniye Tyazhelykh Legkoplavkikh Metallov iz Rasplavlennykh Soley (Electrochemical Refining of Heavy Low-Melting Metals From Fused Salts), Kiev, "Naukova Dumka," 1971, 192 pp

Translation of Annotation: This collection deals with the theory and practice of electrolytic preparation and purification of lead, bismuth, antimony, tin, zinc, and other light metals. Analyses of various refining methods are presented, and results are given of investigations of the kinetics of electrode processes and the thermodynamic properties of salt melts and liquid alloys.

This book is intended for engineers and technical personnel in the field of metallurgy and for persons working in scientific institutes and universities.

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USSR

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USSR

DELIMARSKIY, YU. K., Elektrokhimicheskoye Refinirovaniye Tyazhelykh Legkoplavkikh Metallov iz Rasplavlennykh Soley, "Naukova Dumka," 1971, 192 pp

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USSR

DELIMARSKIY, YU. K., Elektrokhimecheskoye Rafinirovaniye Tynzhelykh Legkoplavkikh Metallov iz Rasplavlennykh Soley, "Naukova Dumka," 1971, 192 pp

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USSR

DELIMARSKIY, YU. K., and VDOVENKO, I. D., Editors

Korroziya i Zashchita Metallov (Corrosion and Protection of Metals), Kiev, Naukova Dumka, 1972, 128 pp

Translation of Annotation: This collection of articles contains new information on the theory of rapid annealing. Problems are discussed on production of new polymeric coatings along with the corrosion stability of structural materials in media containing aggressive chloride compounds. Data on the electrochemical behavior of molybdenum, titanium, and of other metals during anode polarization in chromium sulfate solutions are presented.

Works on electrodeposition of the corrosion-resistant indium-antimony and magnetic cobalt-nickel-phosphorus alloys with predetermined properties are also included in this collection.

The book is intended for engineers and technicians of the metallurgical, machine-building, chemical, food, and other branches of industry working on problems of corrosion and protection of metals from corrosion.

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DELIMARSKIY, YU. K., and VDOVENKO, I. D., Korroziya i Zashchita Metallov, Naukova Dumka, 1972, 128 pp

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Extraction and Refining

USSR

UDC 669.3/6.472(02)

DELIMARSKIY, Yu. K., MIKHAYLOV, V. V., and SAMODELOV, A. P., TsNII [Central Scientific Research Institute] of Information and T.-E. I. [Technical and Economic Indicators] of Nonferrous Metallurgy

"Electrochemical Refining of Heavy Nonferrous Metals in Molten Salts"

Elektrokhimicheskoye rafinirovaniye tyazhelykh tsvetnykh metallov v rasplavlennykh solyakh (cf. English above), Moscow, 1971, 151 pp, ill, 93 k. (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G194K from summary)

Translation of Abstract: The book examines and systematizes methods for the electrochemical refining of heavy nonferrous metals in melts of salts according to the data of Soviet and foreign literature. A survey is given of the purification of crude metals (Sn, Pb, Zn, Cu, Ni, Ag, Bi, Sb, In, Cd, Ga, Ge) by electrochemical, anodic, and cathodic refining methods. Experimental results are given for Sb and Cu for purification by the method of electroslag refining with the superimposition of direct current in a melt of salts. On the basis of the analysis here made the prospects for the utilization of the specific method of refining for purification of the metals under consideration are assessed. The method of cathodic-anodic refining of metals --
1/2

USSR

DELIMARSKIY, Yu. K., et al., Elektrokhimicheskoye rafinirovaniye tyazhelykh tsvetnykh metallov v rasplavlennykh solyakh, Moscow, 1971, 151 pp, ill, 93 K. (from RZh-Metallurgiya, No 1, Jan 72, Abstract No IG194K from summary)

a new trend in metal purification processes -- is covered in greatest detail. The prospects of industrial use of this method for the refining of Sn, Pb-Sn alloys and the efficiency of its use for the purification of Bi, Cu, Zn, Sb, Ag are shown.

2/2

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--USE OF VECTOR POLAROGRAPHY FOR STUDYING FUSED SALTS -U-
AUTHOR-(03)-DELIMARSKIY, YU.K., TUMANOVA, N.KH., PRIKHODKO, M.U.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKHIMIYA 1970, 6(4), 555-61
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FUSED SALT, POLAROGRAPHIC ANALYSIS, PLATINUM ELECTRODE,
LITHIUM CHLORIDE, POTASSIUM CHLORIDE, CADMIUM CHLORIDE, ACTIVATION
ENERGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/1125 STEP NO--UR/0364/70/006/004/0056/0561
CIRC ACCESSION NO--AP0121684
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121684

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REDN. OF CdCl_2 SUB2 (SMALLER THAN OR EQUAL TO 0.3 WT.PERCENT) AT A 0.5 MM DIAM. PT WIRE ELECTRODE AT 500DEGREES IN THE 1:1 $\text{KCl}:\text{LiCl}$ MOLTEN SALT WAS STUDIED BY VECTOR POLAROGRAPHY. THE CONCEN. EFFECT ON PEAK HEIGHT WAS LINEAR FOR CONCNS. FROM 10 NEGATIVE PRIME3 TO 0.4 WT.PERCENT; HENCE, VECTOR POLAROGRAPHY CAN BE USED TO DET. CD PRIME2 POSITIVE IN $\text{KCl}-\text{LiCl}$. THE TEMP. COEFF. FOR THE PEAK HEIGHT (FROM 500-600DEGREES) WAS 2PERCENT AND THE ACTIVATION ENERGY 12.7 KCAL-MOLE. FACILITY: INST. OBSHCH. NEORG. KHIM., KIEV, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PRODUCTS OF THE ELECTROLYTIC DECOMPOSITION OF FUSED CARBONATES -U-

AUTHOR-(04)-DELIMARSKIY, YU.K., GRISHCHENKO, V.F., TUMANOVA, N.KH.,
SHAPOVAL, V.I.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZN. 1970, 36(2), 136-41

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYSIS, CARBONATE, FUSED SALT, ALKALI METAL, EUTECTIC,
CHEMICAL DECOMPOSITION, ELECTROLYTIC DECOMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1932

STEP NO--UR/0073/70/036/002/0136/0141

CIRC ACCESSION NO--AP0118894

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118894

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NO C IS FORMED AT THE CATHODE IF AN ELECTROLYTE CONTG. 50PERCENT EQUIMOLAR K SUB2 CO SUB3-NA SUB2 CO SUB3 MIXT. IN KCL IS USED AT 700DEGREES. IF TO THE SOLN., 9 PERCENT LI SUB2 CO SUB3 IS ADDED THE CURRENT EFFICIENCY OF C BECOMES 92.8PERCENT AND IN LI SUB2 CO SUB3-K SUB2 CO SUB3 EUTETIC AT A C.D. OF 1 A-CM PRIME2, THE EFFICIENCY OF C IS 100PERCENT AT 450DEGREES, FALLING WITH TEMP. AND C.D. INCREASE DUE TO FORMATION OF ALKALI METAL. ADDN. OF CO SUB2 TO THE SOLN. HAS LITTLE EFFECT ON C FORMATION. ADDN. OF 3PERCENT KOH MARKEDLY REDUCES IT. THERE IS A DECREASE IN C EFFICIENCY WITH ADDN. OF 25-50PERCENT KF. THE FORMATION OF C IS ATTRIBUTED TO THE PRESENCE OF CO SUB2 IN THE ELECTROLYTE AND THE EFFECT OF LI SUB2 CO SUB3 ON THE EASE OF ITS DECOMP. NO FORMATION OF CO WAS OBSERVED. AT THE ANODE, CO SUB2-O SUB2 MIXTS. ARE FORMED; THE MAX. CO SUB2 :O SUB2 RATIO WAS OBTAINED AT 840DEGREES IN K SUB2 CO SUB3-NA SUB2 CO SUB3 MIXT. (2.35:1.0). IN LI SUB2 CO SUB3-K SUB2 CO SUB3 AT 600DEGREES, THE RATIO WAS 1.0:1.17. THIS IS BELIEVED TO BE LARGELY DUE TO THE INCREASED EASE OF DISCHARGE OF CO SUB3 PRIME2 NEGATIVE AT THE HIGHER TEMP. FACILITY: INST. OBSHCH. NEORG. KHIM., KIEV, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--SINTERING OF A SILICON TITANIUM CONCENTRATE FROM THE YAREGA DEPOSIT
WITH SODIUM FLUOROSILICATE -U-
AUTHOR-(03)-DELIMARSKIY, YU.K., CHERNOV, R.V., KOVZUN, I.G.

COUNTRY OF INFO--USSR

SOURCE--ZF. PRIKL. KHIM. (LENINGRAD) 1970, 43 (5), 1008-15

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--MELTING POINT, CHEMICAL COMPOSITION, SILICON, TITANIUM,
MINERAL DEPOSIT, GEOGRAPHIC LOCATION, SILICATE, FLUORIDE, SINTERING
FURNACE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3004/0957

STEP NO--UR/0080/70/043/005/1008/1015

CIRC ACCESSION NO--AP0131542

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0131542

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF THE PARTICLE SIZE DISTRIBUTION OF THE CONC., THE TEMP., THE CHEM. COMPN. OF THE STARTING MIXT., AND THE PRESSURE OF THE GASEOUS SIF SUB4 ON THE SINTERING PROCESS WERE STUDIED. THE EQUIL. PRESSURE OF SIF SUB4 OVER A MIXT. OF THE CONC. AND NA SUB2 SIF SUB6 INCREASES SHARPLY AS COMPARED TO THE PRESSURE OVER PURE NA SUB2 SIF SUB6 AT EQUAL TEMP. INTRODUCTION OF SUBSTANCES INTO THE REACTION MIXT. WHICH DECREASE THE M.P. EXERTS A POS. EFFECT ON THE DEGREE OF INTERACTION OF THE COMPONENTS. FACILITY: INST. ODSHCH. NEORG. KHIM., KIEV, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--TITANIUM DISILICIDE PREPARATION -U-
AUTHOR-(03)-DELIMARSKIY, YU.K., CHERNOV, R.V., NIZOV, A.P.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 264,696
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)
DATE PUBLISHED--03MAR70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL PATENT, ELECTROLYSIS, INERT GAS, TITANIUM COMPOUND,
SILICIDE, FLUORIDE, ALKALI METAL, HALIDE, ARGON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/1467 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0126998
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0126998

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TI DISILICIDE IS PREPD. BY
ELECTROLYSIS IN AN INERT GAS, E.G. AR, ATM. IN AN ELECTROLYTE CONTG.
ALKALI METAL HALIDES AND HAVING THE FOLLOWING COMPN. (IN WT. PERCENT):
NACL,KCL (1:1) 55-7, ALKALI METAL FLUOROSILICATE 30-8, AND A TI,CONTG.
COMPD., E.G. TIO SUB2 OR NA SUB2 TIF SUB6, 5-10. FACILITY:
INSTITUT OBSHCHEYI NEORGANICHESKOY KHIMII AN UKRAINSKOY SSR.

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